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INTRODUCTION

This booklet is intended as a supplement to the PIED PIPER User's Manual and contains general information on the optional dual RS232C serial card and the expansion floppy disk drive. available for your PIED PIPER.

When you purchase a hardware option for your system, you will receive a diskette containing the software needed to configure the particular piece of hardware for your PIED PIPER. Instructions for using this software are provided in this booklet. This booklet also contains corresponding information and instructions on the use of the dual RS232C serial card and the expansion floppy disk drive. A separate "Modem Communications Manual" has been prepared for the modem + RS232C serial card.

Instructions for hooking up a monitor to your system are provided in your PIED PIPER User's Manual.

Remember to refer to the handy glossary located in the PIED PIPER User's Manual for definitions of any computer terms and jargon you may not be familiar with.

PIED PIPER OPTIONS

Following is a description of each of the peripherals that are available to enhance your PIED PIPER Computer. For further information on pricing and availability, please contact your local dealer.

DUAL RS232C SERIAL CARD

The dual RS232C serial card consists of two RS232C Asynchronous/Synchronous serial ports. It allows for connection of the PIED PIPER to any serial interface including printers, and permits networking and connection to high speed modems.

When installed, the serial ports will appear as two 25-pin connectors on the back panel of the PIED PIPER above the RESET button.

EXPANSION FLOPPY DISK DRIVE

The expansion floppy disk drive for the PIED PIPER is a 5 1/4", slim line drive with 1 megabyte of unformatted and 784K bytes of formatted storage capacity. It is housed in its own attractive case, and is sized to complement the PIED PIPER.

In addition to significantly expanding the storage capacity of your system, the expansion floppy disk drive is extremely useful for facilitating the back-up and transferring of files between diskettes.

When installed, the 37-pin connector required for the expansion floppy disk drive will be located on the rear panel of the PIED PIPER in the top left corner.

MODEM + RS232C SERIAL CARD

The modem + RS232C serial card consists of one 300/600/1200 baud auto-dial, auto-answer, direct connect telephone modem supporting BELL 103, 202 and CCITT V.21 and V.23 protocol, and one RS232C Asynchronous/Synchronous serial port. The modem interface provides connection to telecommunication networks such as Datapac, Telenet and Tymnet. These networks then provide users with the ability to access information utilities such as The Source, Dow Jones News Retrieval**, and CompuServe***.*

Both the telephone modem interface and the serial interface are installed in the expansion opening above the RESET button. There is one 25-pin connector for the serial port, and there are two connectors for the modem interface: one for direct connect, and one for an acoustic coupler.

Telephones with detachable cords allow you to hook your telephone line directly to the computer. This is done by plugging the line cord and jack normally attached to the telephone, directly into the PIED PIPER. For those telephones without detachable cords, there is a 5-pin connector for connection to an acoustic coupler. The acoustic coupler (available as an accessory) attaches directly to the computer through the 5-pin connector. It communicates with the telephone through the telephone handset, which fits directly onto the coupler.

PERIPHERAL CONFIGURATION

The "PERIPHERAL" diskette you have received contains additional software utilities and programs for the peripheral you have purchased. This diskette also contains two programs called INSTALL and CONFIG, and the activation program required for the option you have purchased. Before you begin, it is a good idea to make a back-up copy of this diskette, and store the original in a safe place.

The INSTALL & CONFIG Programs

The INSTALL program will allow your existing PIED PIPER system to support the optional peripheral you have purchased. You must run this program on your system before you use your new peripheral the first time.

To run the INSTALL program, you must first start up your PIED PIPER with your original "SYSTEM" diskette (or any diskette containing the CP/M® operating system). Once the command prompt ("A>") has appeared, remove the "SYSTEM" diskette and insert the "PERIPHERAL" diskette. ***DO NOT HIT CTRL C,*** *just type in:*

INSTALL ↵

Remember ↵ *means hit the RETURN key.*

The computer will respond with:

Installation complete.

Reading in System Configuration Utility....

Once the installation is complete, the INSTALL program will activate the CONFIG program automatically.

The CONFIG program will configure your new peripheral for use with the PIED PIPER. The program offers three configuration options:

Change number of floppy drives	***(Y/N)?***
Configure terminal	***(Y/N)?***
Configure expansion card	***(Y/N)?***

As each option is chosen, a number of questions will appear on your screen that must be answered before the configuration can be completed.

When you begin, the CONFIG program will prompt you to insert a 'source' diskette. If you have already configured a diskette for another option, you can simply modify this diskette (providing it contains a release number of 2.00 or later; the release number will appear in the sign-on message) instead of configuring for all the options again. Therefore, you should use this as your source diskette. If the diskette does not have the proper release number, or if you have not configured for any options before, use the "PERIPHERAL" diskette. When the configuration is complete, the program will prompt you to insert a 'destination' diskette. You can then insert any diskette on which you wish the configuration to reside.

We'll review the configuration for the expansion floppy disk drive now. At the end of this chapter, we'll review the questions that will appear when the "Configure terminal" and "Configure expansion card" options are chosen.

When the CONFIG program is activated, the following will appear:

System Configuration Utility (STM REL. 2.00)

Insert source diskette
Press RETURN to continue.

If the diskette currently in the drive is the source diskette, just hit RETURN, or insert the source diskette, hit RETURN and you will see:

Present configuration on currently logged disk:

Number of drives : One
Terminal emulation : Hazeltine

Any change (Y/N)?

To change the current configuration, type "Y" and the following will appear:

Change number of floppy drives (Y/N)?

To configure for the expansion floppy disk drive, type in:

Y

and the following will appear:

Enter 1 or 2: 1

The number of floppy disk drives currently configured for the system is displayed: in this case one. To leave the configuration as is, just hit the RETURN key. To change the configuration, type in:

2

and the next option will be displayed:

Configure terminal (Y/N)?

Since we are configuring only for the expansion floppy disk drive, answer "N" to the remaining configuration options which will appear one after the other on your screen. When this is complete, the following will appear:

Configuration as currently modified:

Number of drives : Two
Terminal emulation : Hazeltine

Any change (Y/N)?

If you answer "Y", each configuration option will be displayed again one at a time. "N" will produce the following:

Insert destination diskette
Press RETURN to continue.

If your destination diskette in this case is the diskette currently in the disk drive, simply hit the RETURN key, or insert the destination diskette, hit RETURN and you will see:

To activate selected options,
press RESET button.

System configuration completed.
A>

At this point, you should press the RESET button as requested, to activate the modified CP/M® operating system. The expansion floppy disk drive configuration is now complete and the PIED PIPER sign-on message will display the new drive configuration.

You do not have to run the CONFIG program each time you want to use your peripheral. Simply use the newly configured diskette (or a copy of it) whenever you start up your system in order to activate the option you have purchased. It is advisable to make copies of this diskette and store the original on file. To make a copy of the newly configured diskette, run the PREPARE program on a blank diskette. Running PREPARE will automatically copy the modified operating system to the new diskette.

It's important to note that you DO NOT have to copy all your existing files onto new diskettes to use them.

To use any of your old diskettes, you simply start up your PIED PIPER with your newly configured diskette (or a copy). Once the command prompt has appeared, remove this diskette and insert the diskette of your choice. Hit "CTRL C" to let the computer know you have inserted a different diskette and proceed as usual.

It is not necessary to insert a configured diskette each time you change diskettes. Do this only if you have turned the computer off or have hit the RESET button. Otherwise, just remember to hit "CTRL C" after inserting a different diskette.

The "Configure terminal" Option

If the "Configure terminal" option is chosen, the following terminal emulation options will appear:

1. Hazeltine
2. ADM-3A

Enter #: 1

The PIED PIPER is currently emulating the Hazeltine-1500 terminal. To change this configuration to emulate the ADM-3A, type in:

2

and the next configuration option will appear for your consideration. After answering "N" to this option, the program will be completed in the usual manner (See expansion floppy disk drive section).

The "Configure expansion card" Option

If the "Configure expansion card" option is chosen, the following will appear:

1. Serial card
2. Modem card
3. No expansion card

Enter #: 3

The system is currently configured for no expansion card. To configure for the dual RS232C serial card. Type in:

1

and you will see:

Reinitialize port A (Y/N)?

The default values for the baud rate, stop bit, data bit, and parity bit for port A are:

Transmit Baud rate	:	*9600*
Receive Baud rate	:	*9600*
Stop bit	:	*One*
Data bit	:	*Eight*
Parity bit	:	*None*

If you do not need to change these settings, type in "N". If you do, type in:

Y

and the following will appear:

Baud rate:	**Stop bit:**	**Data Bit:**	**Parity bit:**
1. 110	**1. One**	**1. Five**	**1. Even**
2. 300	**2. One & one half**	**2. Six**	**2. Odd**
3. 600	**3. Two**	**3. Seven**	**3. None**
4. 1200		**4. Eight**	
5. 2400			
6. 4800			
7. 9600			

Select transmit baud rate #: 7

To leave as is, hit the RETURN key. To change, enter the new number. The following questions will appear one after the other. Answer each one in the same manner.

Select receive baud rate #: 7
Select stop bit #: 1
Select data bit #: 4
Select parity bit #: 3

Once these questions have been answered, the following will appear:

Reinitialize port B (Y/N)?

The baud rate, stop bit, data bit, and parity bit for port B have been set the same as port A. (Note: Port B has only one baud rate) If you wish to change them, follow the same procedures outlined for port A. If not hit "N".

Once you have answered these questions, the program will be completed in the usual manner.

If you do not need to change all of the settings for either Port A or Port B, you can hit the "ESCape" key and by-pass the remaining questions. For example, if you must change the stop bit setting for Port A, but do not need to change the remaining settings for either port, type in the corresponding number for the stop bit setting you desire. Then hit the "ESC" key and you will by-pass the remaining questions for Port A as well as Port B. Once you have hit the "ESC" key, the program will be completed in the usual manner.

The "Modem card" Option

To configure for the serial port of the modem + RS232C serial card, type in:

2

and the following will appear:

Reinitialize port A (Y/N)?

The baud rate, stop bit, data bit, and parity bit for the RS232C serial port on the modem card are set as follows:

Baud rate : 9600
Stop bit : One
Data bit : Eight
Parity bit: None

If you do not need to change these settings, type in "N". If you do, type in:

Y

and the following will be displayed:

Baud Rate:	**Stop bit:**	**Data bit:**	**Parity bit:**
1. 110	**1. One**	**1. Five**	**1. Even**
2. 300	**2. One & one half**	**2. Six**	**2. Odd**
3. 600	**3. Two**	**3. Seven**	**3. None**
4. 1200		**4. Eight**	
5. 2400			
6. 4800			

Select baud rate #: 7

To leave as is, hit the RETURN key. To change, simply type in the number corresponding to the setting you desire. Use the same procedure to answer the following questions which will appear one after the other:

Select stop bit #: 1
Select data bit #: 4
Select parity bit #: 3

As in the case of the dual RS232C serial card configuration, you can use the "ESC" key to by-pass any remaining questions. Once these questions have been answered, or you have hit the "ESC" key, the program will be completed in the usual manner.

For information on modem connection, refer to the "Modem Communications Manual".

The "No expansion card" Option

If you had previously configured for either of the expansion cards and now wish to change this configuration to no expansion card, type in:

3

and the program will be completed in the usual manner.

DUAL RS232C SERIAL CARD

The dual RS232C serial card provides you with two RS232C Asynchronous/Synchronous serial ports. As mentioned, this allows for connection to any serial interface including printers. It also facilitates networking and connection to high speed modems.

The ports, in the form of two 25-pin connectors are installed on the rear panel of the PIED PIPER above the RESET button. Port A is visible as the connector on the right as viewed from the back, and Port B is the connector on the left.

It is a good idea to complete and mail the warranty card now. This will register your new dual RS232C serial card with STM and ensure service in the unlikely event the serial card should fail.

Following are the installation instructions, interface information and the dual RS232C serial card hardware configuration information. Also included are information and instructions on the applications software supplied with your new dual RS232C serial card.

Some of the information included in this section is provided for more advanced users, so don't worry if you don't understand it. Your most important objective is to install the dual RS232C serial card and configure it for use with your PIED PIPER.

INTERFACE INFORMATION

The dual RS232C serial card is classified as DTE (Data Terminal Equipment) and follows all EIA standards.

PORT A:

PIN NO.	SIGNAL NAME	SIGNAL FLOW
1	Chasis Ground	-
2	Transmit Data	Output
3	Receive Data	Input
4	Request to Send	Output
5	Clear to Send	Input
6	Data Set Ready	Input
7	Signal Ground	-
8	Receive Line Signal Detector	Input
15	Transmit Baud Rate from DCE	Input
17	Receive Baud Rate from DCE	Input
20	Data Terminal Ready	Output
22	Ring Indicator	Input
24	Transmit Baud Rate to DCE	Output

PORT B:

PIN NO.	SIGNAL NAME	SIGNAL FLOW
1	Chasis Ground	-
2	Transmit Data	Output
3	Receive Data	Input
4	Request to Send	Output
5	Clear to Send	Input
6	Data Set Ready	Input
7	Signal Ground	-
8	Receive Line Signal Detector	Input
20	Data Terminal Ready	Output
22	Ring Indicator	Input

DUAL RS232C SERIAL CARD HARDWARE CONFIGURATION

ASYCHRONOUS/SYNCHRONOUS MODES

Port A and Port B can be operated as either asynchronous or synchronous serial interfaces.

When you receive your dual RS232C serial card and configure it for use with your PIED PIPER, both ports will operate in the asynchronous mode. Since most printers and terminals operate in the asynchronous mode, your dual RS232C serial card will be ready for use.

For more advanced users who want to configure the ports to operate in the synchronous mode, please refer to the specifications on Intel's 8251A Universal Asynchronous/Synchronous Receiver Transmitter Chip for more detailed information.

BAUD RATE CLOCKS

There are four jumper locations for Port A on the dual RS232C serial card. These jumper locations determine whether an internal or external baud rate clock is used. When shipped, the jumpers are positioned between pins 3 and 4 and pins 7 and 8. With the jumpers in this position, the transmit baud rate and receive baud rate clock is generated from the serial card's baud rate generator. However, if the Data Communication Equipment (DCE) being used requires the transmit baud rate and receive baud rate clock to generate from the DCE instead of the serial card, the jumpers must be re-positioned to receive the external clock.

To re-position the jumpers, follow the step-by-step instructions below and refer to Figure 1.

Step 1: Look carefully at the serial card. Notice the four jumper locations marked J3 in the top left quadrant of the card as pictured in Figure 1.

Step 2: Right now, the two jumpers are positioned between pins 3 and 4 and pins 7 and 8. As mentioned, these jumper positions cause the transmit baud rate and receive baud rate clock to generate from the serial card. If your DCE requires the transmit baud rate and receive baud rate clock to generate from the DCE, re-position the jumpers between pins 1 and 2 and pins 5 and 6.

Step 3: You may now install the dual RS232C serial card in the PIED PIPER.

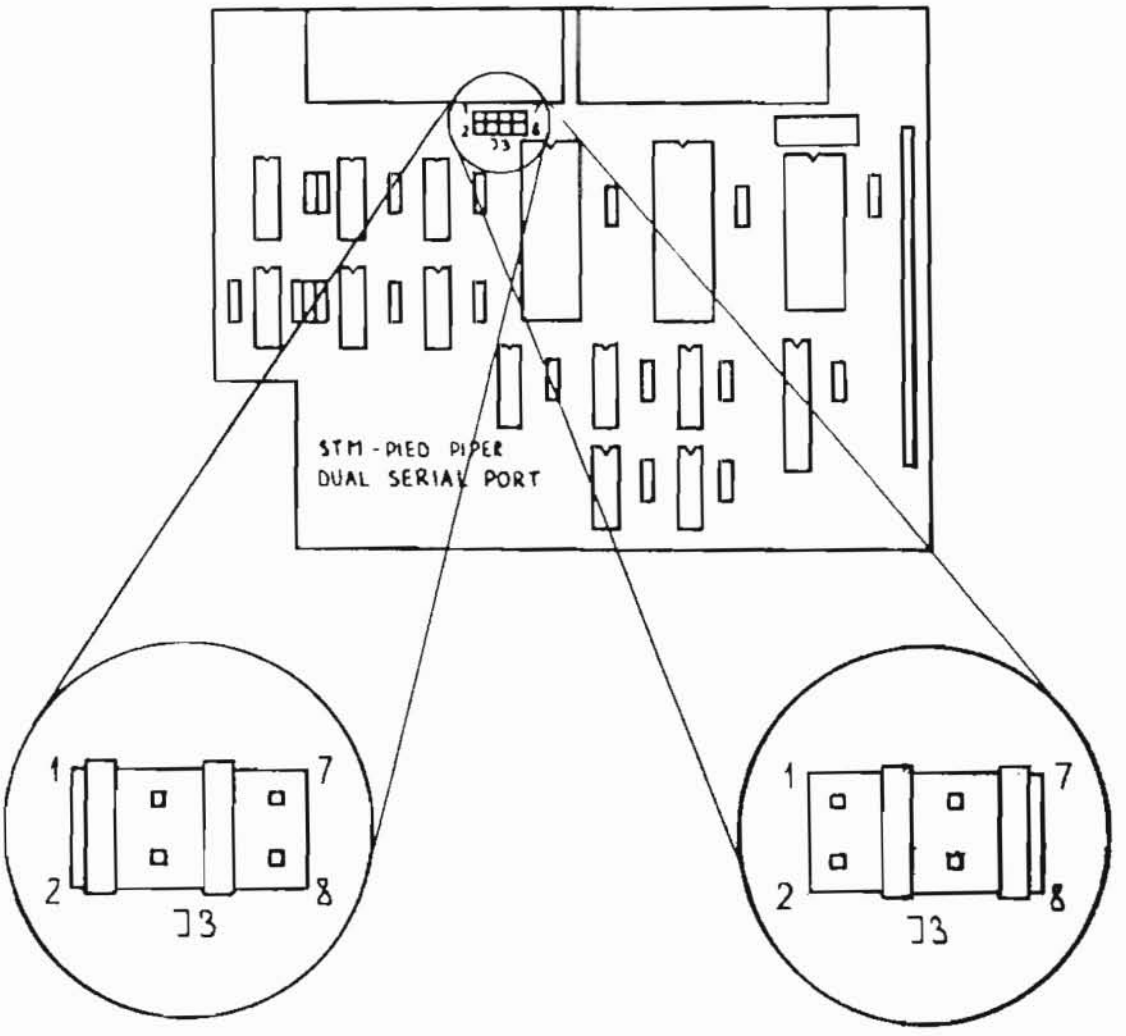

FIGURE 1

JUMPER LOCATION	*FUNCTION*
1 TO 2	*RECEIVE BAUD RATE FROM DATA COMMUNICATION EQUIPMENT.*
5 TO 6	*TRANSMIT BAUD RATE FROM DATA COMMUNICATION EQUIPMENT.*
3 TO 4	*RECEIVE BAUD RATE FROM DUAL RS232C SERIAL CARD.*
7 TO 8	*TRANSMIT BAUD RATE FROM DUAL RS232C CARD.*

INSTALLATION INSTRUCTIONS

The dual RS232C serial card is installed inside the PIED PIPER case on top of the computer's main board. The expansion opening used for the card is located above the RESET button on the back panel of the PIED PIPER. To install the dual RS232C serial card, follow the step-by-step instructions below and refer to the illustrations in this section.

Step 1: Turn off the power to the PIED PIPER.

Step 2: Unplug the line cord from the wall outlet.

Step 3: Disconnect all the cables from the rear panel of the PIED PIPER.

Step 4: Using a Philips screwdriver, remove the seven mounting screws on the bottom of the machine as pictured in Figure 2.

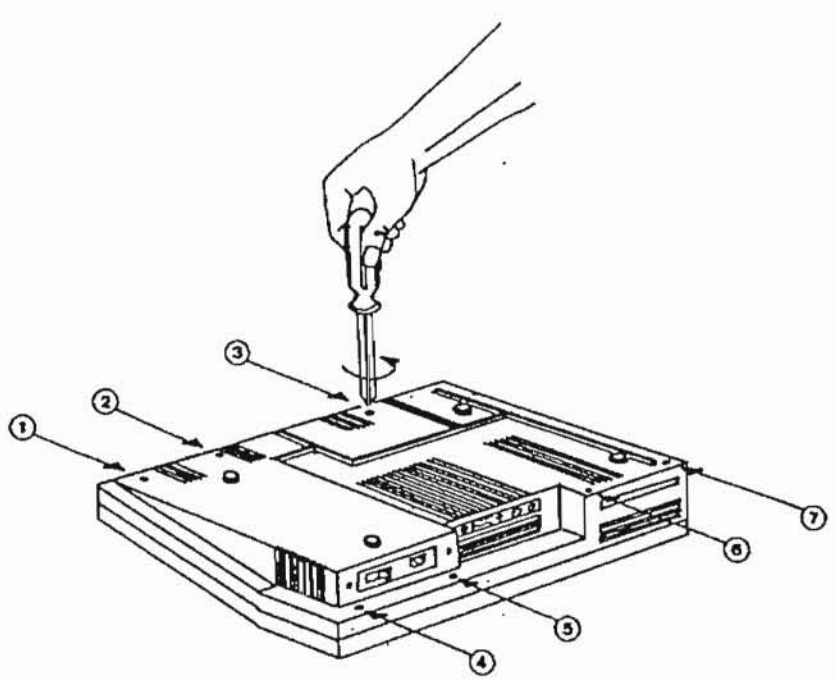

FIGURE 2

Step 5: Carefully lift off the top of the PIED PIPER. **CAUTION:** THE TOP OF THE COMPUTER IS CONNECTED TO THE BOTTOM VIA THE KEYBOARD CABLE. SINCE THIS CABLE IS ONLY 7" LONG, IT MUST BE DISCONNECTED TO PROVIDE BETTER ACCESS TO THE INSIDE OF THE COMPUTER. TO DO THIS, SIMPLY DISCONNECT THE KEYBOARD CABLE ATTACHED TO THE COMPUTER'S MAIN BOARD AT CONNECTOR J13.
NOTE: When you remove the top of the PIED PIPER, the black plastic face plate of the disk drive may drop. If this happens, it is easily put back into position when the cover is replaced.

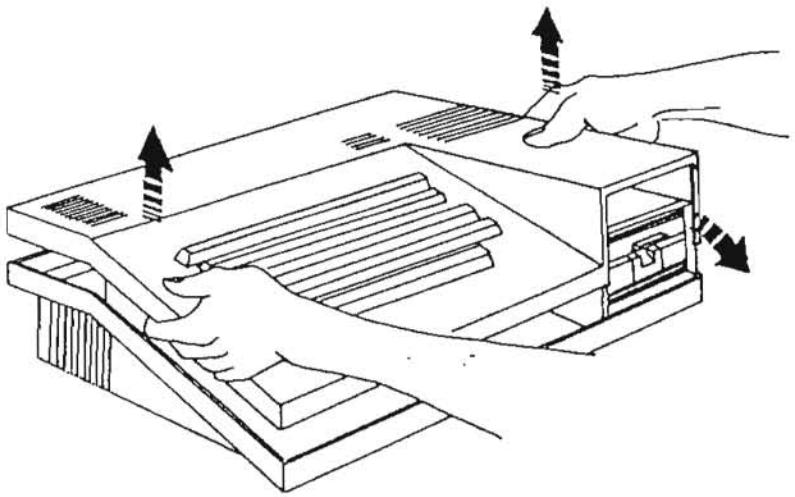

FIGURE 3

Step 6: Push out the plastic panel covering the expansion opening as shown in Figure 4.

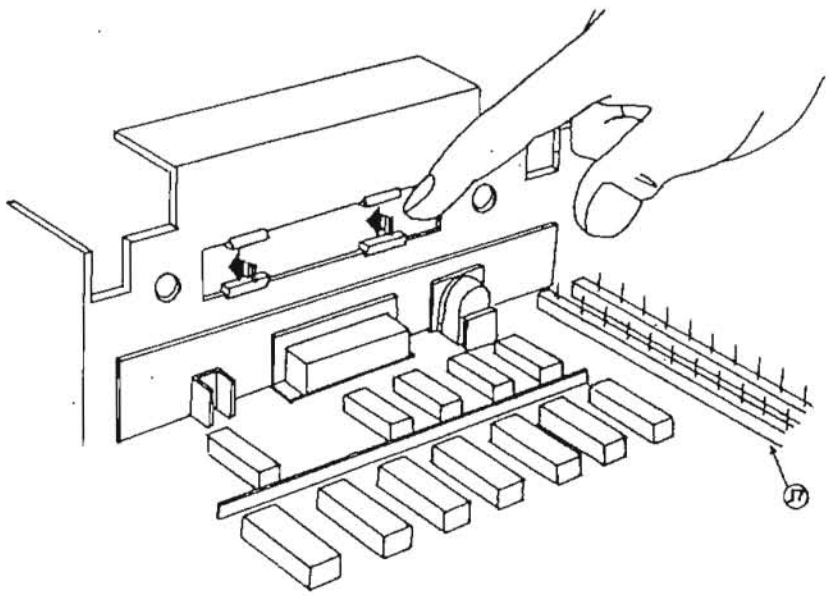

FIGURE 4

Step 7: *Attach the two plastic stand-offs to the dual RS232C serial card as pictured in Figure 5.*

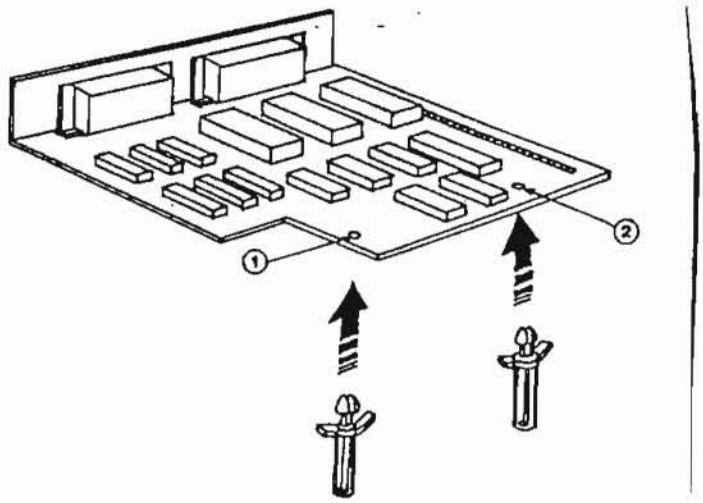

FIGURE 5

Step 8: *Position the dual RS232C serial card in front of the expansion opening as shown in Figure 6. Connect the cable attached to the card to connector J7 on the main board of the computer. As shown in Figure 7, pin number 25 on connector J7 is exposed when the cable is connected.*

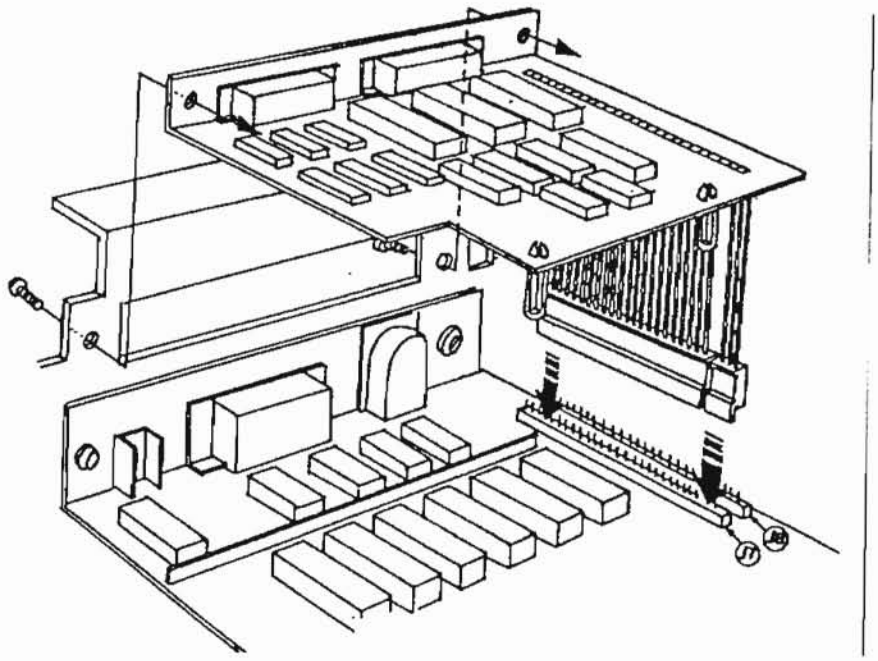

FIGURE 6

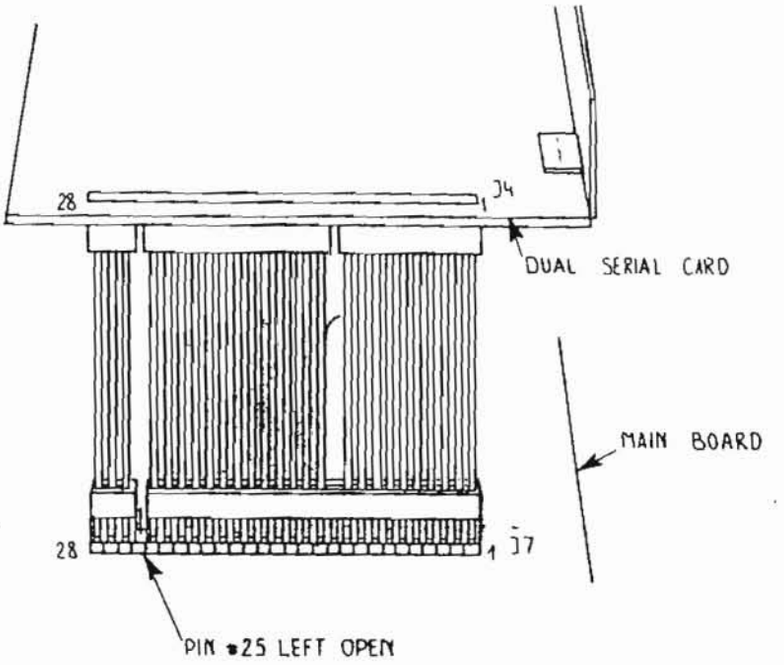

FIGURE 7

Step 9: *Align the screw holes of the card with the holes in the PIED PIPER.*

Step 10: *Using the two screws you received with the dual RS232C serial card, attach the card to the PIED PIPER.*

Step 11: *Reconnect the keyboard cable to connector J13 on the computer's main board.*

Step 12: *Carefully replace the lid on the PIED PIPER, making sure you have put back into position the disk drive face plate, and tighten the seven mounting screws.*

Step 13: *Re-connect all the cables to the PIED PIPER and plug the line cord into a wall outlet.*

The dual RS232C serial card installation is now complete.

SERIAL PRINTER

One of the most common uses of the dual RS232C serial card is for connection to serial printers.

Before you connect a serial printer to your PIED PIPER, use the diskette you received with this documentation to configure the system for the serial card.

Before connecting a serial printer to the PIED PIPER, you must purchase the proper data cable for the printer you will be connecting to the PIED PIPER.

To connect a serial printer to Port A, connect one end of the cable to the printer. Then, connect the other end to Port A (the connector on the right as viewed from the back) of the dual RS232C serial card. Now start up your system with a diskette that has been configured for the serial card options. When the command prompt appears, type in the following command to activate Port A:

STAT LST:=LPT:

The command prompt will re-appear and you will be ready to begin using your PIED PIPER with a serial printer connected to Port A.

To connect a serial printer to Port B, follow the procedures outlined above but connect the data cable to Port B (the connector on the left as viewed from the back) and type in:

STAT LST:=UL1:

To use the parallel port again, type in:

STAT LST:=TTY:

DUAL RS232C SERIAL CARD SOFTWARE

TERMINAL

TERMINAL is a terminal emulation program that will enable the PIED PIPER to act as a dumb terminal. By connecting a modem such as the Hayes Stack Smartmodem, Novation Cat, or similar models to the PIED PIPER, communication with telecommunication

networks such as Datapac, Telenet and Tymnet is made possible. This in turn, allows the user access to information utilities such as The Source*, Dow Jones News Retrieval**, and CompuServe***.

To use the TERMINAL program, connect one end of the appropriate cable to the host computer or modem. Connect the other end to Port A of the PIED PIPER. Then type in:

TERMINAL ↵

The following will be displayed:

Serial Communication Utility (STM REL. 2.00)

Baud Rate Selection:

1. 300 Baud
2. 1200 Baud
3. 2400 Baud
4. 4800 Baud
5. 9600 Baud

Enter Selection:

You simply type in the number corresponding to the baud rate you desire and the following will appear:

PIED PIPER TERMINAL EMULATION

At this point, enter the appropriate data for the information system you wish to access.

To exit from the program, hit the RESET button.

EXPANSION FLOPPY DISK DRIVE

The PIED PIPER expansion floppy disk drive, which you have just purchased, greatly expands the storage capacity of your PIED PIPER. Back-up of diskettes and transferring of files from one diskette to another is accomplished more quickly and efficiently with two disk drives.

This floppy disk drive is the same size and of the same storage capacity as the disk drive built into your PIED PIPER. It is a 5 1/4", 1 Megabyte drive which, when added alongside your PIED PIPER, will provide you with a total of 2 megabytes of unformatted storage capacity.

It is a good idea to complete and main the warranty card now. This will register your new expansion floppy disk drive with STM and ensure service in the unlikely event the unit should fail.

The following sections describe the connection of the optional disk drive to your PIED PIPER and instruct you in its use.

CONNECTING THE EXPANSION FLOPPY DISK DRIVE

Remember, no additional power supply is required for the expansion floppy disk drive. It just needs to be plugged in.

Before you connect your new disk drive, turn off the power to the PIED PIPER and position it next to the built-in drive of your PIED PIPER. Plug the cable coming from the add-on disk drive into the 37-pin connector located on the rear panel of the system as shown in Figure 8. To ensure the expansion floppy disk drive is not accidently disconnected from the PIED PIPER, use the two screws supplied to attach the cable to the rear panel of the system as pictured in Figure 9.

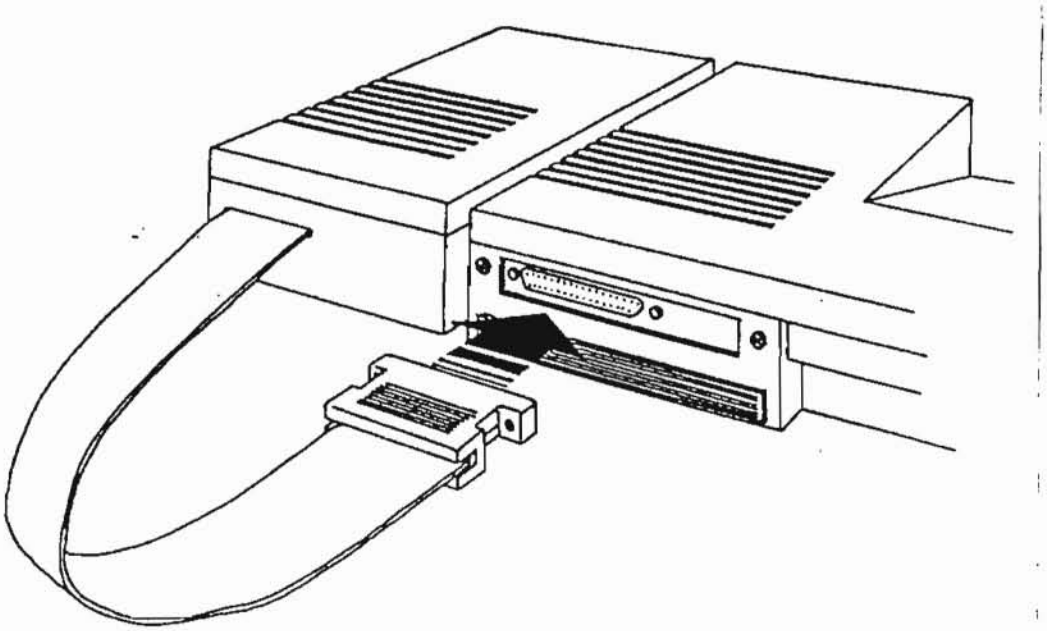

FIGURE 8

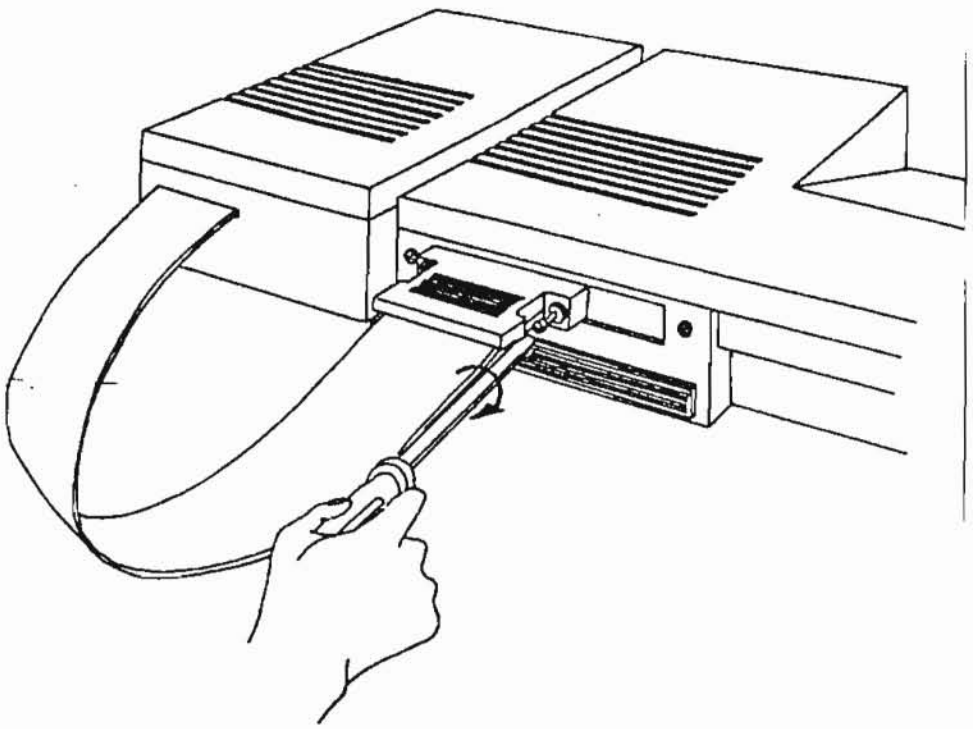

FIGURE 9

GETTING STARTED

After connecting your new floppy disk drive, use your newly configured diskette to configure the system for the second drive.

USING THE EXPANSION FLOPPY DISK DRIVE

To use the expansion floppy disk drive, you must first start up your system with a diskette that has been configured for the additional drive and obtain the command prompt ("A>"). To switch, or "log on" to the expansion drive, insert a formatted diskette in Drive B, and type in:

B: ↵

NOTE: Do not omit the colon (":") when entering this command. The computer reads the colon (:) as "drive" and will not understand the command if it reads only the letter "B".

The computer will respond with the command prompt for the B drive:

B>

This tells you that the computer is now using the expansion floppy disk drive. The "DRIVE B" light on the PIED PIPER panel above the keyboard will be illuminated.

To return to Drive A, enter:

A: ↵

and you will receive the command prompt for the A drive ("A>").

You can also access files stored on the diskette in Drive B while logged in on Drive A. For example, to view the directory (DIR) of the diskette in Drive B, type in:

DIR B: ↵

The computer will display the files on the diskette in Drive B.

UTILITIES

You will find that the back-up of diskettes and transferring of files from one diskette to another is easier and faster with two disk drives.

The PREPARE and COPY programs have been enhanced for your new dual drive system. We'll review these in their new form now. We'll also review the PIP program which is used to transfer files from one diskette to another using two disk drives. (It replaces your old TRANSFER program.) If any error messages appear during these programs, remember to refer to the "ERROR MESSAGES" section in your User's Manual.

PREPARE

The PREPARE program formats, verifies and copies the operating system onto a new diskette. To PREPARE a diskette using Drive B, insert the newly configured diskette in Drive A and enter:

Prepare B:

The computer will respond with:

Disk Preparation Utility. (STM REL. 2.00)

You should always specify the disk drive name (ie: A or B) when running the PREPARE program on a two drive system. If you specify a non-existant drive beyond B, the following message will appear:

***** Invalid Disk Drive Name.***

Enter Disk Drive Name:

After the "Disk Preparation Utility" message has been displayed, the following will appear:

Insert diskette in Drive B.
Continue (Y/N)?

At this point insert a blank diskette in Drive B (the expansion disk drive), type "Y" for yes and you'll see:

Formatting...

Once this is complete, the following will appear:

Verifying...

After verification is complete, the program will copy the modified CP/M® operating system onto the diskette. You'll see the message:

Copying Operating System...

Once the PREPARE program is complete you'll see:

Preparation completed.

Prepare another diskette (Y/N)?

Entering "Y" for yes will begin the PREPARE program again. "N" for no will return you to the command prompt.

To re-format diskettes which contain errors, use the PREPARE program with the "/N" parameter. The "/N" parameter will format the diskette without checking for the presence of files. Therefore enabling you to re-format diskette you may not have been able to access. If errors continue to appear during the PREPARE program, discard the diskette.

For example, to prepare a diskette in Drive B using the "/N" parameter, type in:

Prepare B: /N ↵

You will then be asked to insert a diskette in Drive B. After inserting the diskette, the program will be completed in the usual manner but without prompt messages.

COPY

The COPY program is used to copy the entire contents of one diskette to another. To use this program to copy from Drive A to Drive B, insert your new diskette in Drive A, obtain the command prompt, and enter:

Copy ↵

The computer will respond:

Disk Copy Utility (STM REL. 2.00)

Enter source drive name:

Since we are copying from Drive A to Drive B, enter "A" and the following will appear:

Enter destination drive name:

The destination drive in this case is Drive B, so enter "B" and you will see:

Insert source diskette in Drive A
Insert destination diskette in Drive B

Copy diskette from Drive A to B (Y/N)?

You must now insert the source and destination diskettes in Drives A and B respectively and type "Y" to the confirmation message. If the diskette currently in your source drive is the source diskette, just type "Y" to the confirmation message to begin the copy procedure. You will then hear a 'clicking' noise coming from the drives, and the drive indicator lights A & B, will flash back and forth as the diskette is copied. When the procedure is complete, you will see:

Copy completed.
Copy another diskette (Y/N)?

Answering "Y" will begin the program again. "N" will produce the following display:

Insert system diskette in Drive A.
Press RETURN to continue.

This message appears on the screen to ensure you have a diskette containing the CP/M® operating system when you exit from the program. Pressing RETURN will exit the program and display the command prompt.

If you like, you can specify the source and destination drive names when you enter the COPY command. For example, to copy from Drive A to B, enter:

Copy A: B: ↵

The computer will immediately prompt you to insert the source and destination diskettes, and then continue the program in the usual manner.

PIP

The PIP program is used to transfer files from one diskette to another using two disk drives.

To use the program, type in "PIP" and the computer will respond with an asterisk (*) as a prompt for a command. You can then copy each file, one at a time. After each command is executed, a "PIP prompt" ("*") will appear. To exit from the program, just hit the return key.

For example, to copy the file LETTER from Drive A to Drive B, type in:

PIP ↵

The computer will respond with the "PIP prompt":

*

Then type in:

B:=A:LETTER ↵

There should be a slight delay and the computer will respond with another "PIP prompt" (*), indicating the copy has been made.

NOTE: The Destination Drive (in this case, "B") is always typed first.

If only one file is to be copied, you can place the command on the same line as the "PIP" command. For example, to copy the file BOOK, type in:

PIP B:=A:BOOK ↵

As the file is being copied, you will hear a 'clicking' noise from the drives, and the drive indicator lights A and B, will flash. When the copy has been made, the computer will respond with the command prompt.

If you wish to PIP all the files on Drive A to Drive B, type in:

PIP B:=A:*. ↵

As each file is copied, it will be listed on your screen. This method of transferring all the files from one diskette to another is quite lengthy. Therefore, you may prefer to use the COPY utility.

When the copy is complete, the command prompt will appear.

To ensure your file has been transferred, type in DIR for a listing of all the files stored on the diskette.